

**Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554**

In the Matter of)	
)	
Wireless Emergency Alerts)	PS Docket 15-91
)	
Amendments to Part 11 of the Commission's Rules)	PS Docket 15-94
Regarding the Emergency Alert System)	
)	

COMMENTS OF THE NEW YORK CITY EMERGENCY MANAGEMENT DEPARTMENT

Submitted Electronically December 8, 2016

INTRODUCTION

1. The City of New York's Emergency Management Department ("NYCEM" or "the Department" or "the agency") is pleased to submit comments in the above referenced matters in an effort to assist the Federal Communications Commission ("FCC" or "the Commission") with the enhancement of the nation's ability to rapidly, efficiently, and securely deliver emergency information to the public. NYCEM, New York City's agency designated with emergency preparedness, interagency coordination, and dissemination of emergency public information, has considerable experience with and interest in advancing both the Emergency Alert System ("EAS") and Wireless Emergency Alerts ("WEA").¹ NYCEM appreciates the rules adopted in the Commission's September 2016 Report and Order and strongly believes the rule changes adopted will strengthen the Wireless Emergency Alert system and make our country safer and more informed during emergencies. However, in some cases, the Department does not believe the adopted rules go far enough. NYCEM is encouraged by a number of the proposals in the Further Notice of Proposed Rulemaking ("Notice" or "FNPRM"). NYCEM understands and appreciates the effort that Commercial Mobile Service Providers ("CMSP" or "CMSPs") must undertake to operationalize the adopted rules. Given those extended implementation timeframes, NYCEM strongly encourages the Commission to adopt rules that take a "long view" of system improvements, even if the adopted implementation timeframe is several years.

DEFINING MODES OF PARTICIPATION IN WEA

2. While NYCEM appreciates the voluntary nature of participation in the Wireless Emergency Alert system by CMSPs, it is critically important for both alert originators and consumers to understand simply and plainly to what extent CMSPs are providing WEA service within both (a) the CMSP's coverage area

¹ New York City Charter (as amended), Chapter 19-A § 497(a), 497(f).

and (b) each alert originators specific jurisdiction. NYCEM agrees with the California Public Utilities Commission's original comments on this subject and encourages the Commission to reconsider its position and require CMSPs to share this information, at the very least, with alert originators.² NYCEM strongly believes this information is critically important to the emergency management community as each jurisdiction develops and refines its crisis communication plans. If, for example, an emergency management agency learned that some or all of an entire jurisdiction did not have WEA coverage it would need to account for such a communication gap when responding to an incident in that area. For demonstration purposes, NYCEM offers how this information could be visualized by emergency managers as **Appendix A**.

4. NYCEM notes that many CMSPs routinely share coverage data directly with consumers for sales and marketing purposes and espouse the extent of their network in an effort to attract customers³. Many CMSPs also make available robust "coverage locator" maps on their websites to provide information to their consumers.⁴ NYCEM believes that this information could be shared without sensitive information being divulged and upgrading existing "coverage locators" would require little effort on behalf of CMSPs. Instead, NYCEM opines that the ability for a CMSP to offer its customers broad WEA coverage could be an added selling point for one service over another.

5. NYCEM contends that the disclosure of WEA coverage data could be achieved by CMSPs without "divulg[ing] competitively sensitive information" but offers that the Commission could permit such disclosure to be presumptively confidential and limit distribution of said information to alert originators subject to the limits of the Freedom of Information Act and/or similar state and local statutes.⁵ NYCEM believes that it is also important for consumers to understand the capabilities of their chosen CMSP as it relates to participation in the WEA system. The Commission's own *Annual Report and Analysis of - Competitive Market Conditions With Respect to Mobile Wireless, Including Commercial Mobile Services* notes "...consumers increasingly view various mobile voice, messaging, and data services as interchangeable with one another..."⁶ As long as there continue to be wireless providers that elect to either not participate or participate "in part" in the WEA system, it is critically important that consumers be given the information necessary to make an informed decision on a carrier's ability or inability to deliver WEA messages.

6. With respect to the Commission's proposed definitions of WEA participation "in whole" and "in part," NYCEM believes the proposed definition is adequate. In particular, NYCEM strongly supports the Commission's proposal to consider the extent to which mobile devices, not just the network, which a

² *WEA Third Report and Order*, 23 FCC Rcd. 12574, at 51.

³ Why Verizon's New Ad Hits Sprint's Network Claims So Hard, <http://fortune.com/2016/08/08/verizons-new-ad-hits-sprints/>. Accessed November 20, 2016.

⁴ See, for example, Verizon: <http://vzwmap.verizonwireless.com/dotcom/coveragelocator/default.aspx?zip>; AT&T: <https://www.att.com/maps/wireless-coverage.html>; Sprint: <https://coverage.sprint.com/IMPACT.jsp?>; T-Mobile: <http://www.t-mobile.com/coverage-map.html>. All accessed November 20, 2016.

⁵ *Id.* 12575, at 32.

⁶ Seventeenth Report, 29 FCC Rcd. 15314, at 3.

CMSP supports, are included in the definition. NYCEM disagrees with Bluegrass Cellular's assertion related to mobile devices not having a bearing on participation "in whole."⁷ NYCEM does not believe the average consumer differentiates between his mobile device and his mobile network. If a consumer was told his CMSP supported WEA he would believe that his device or devices that utilize that CMSP's network also supported WEA. Permitting such a definition of participation "in whole" would be inconsistent with a common-sense interpretation of full participation.

7. As noted in our Department's prior comments, WEA messages should be available to the public "by all available means."⁸ Consistent with those comments, WEA messages should be made available on any mobile device receiving voice or data services from a participating CMSP including, but not limited to, mobile phones, tablets, computers, and phablets. NYCEM understands the limitation of Wi-Fi-only tablets to receive WEA as they are not receiving data services from a CMSP and encourages the Commission to work with internet service providers and other regulated entities to close this notification gap through subsequent rule making.

8. NYCEM believes that as new participation definitions are adopted it is important that participating CMSPs refresh their election status so that the Commission, the emergency management community, and general public have an understanding of participation. With respect to the frequency that CMSPs update their election status, NYCEM recommends that such renewal be required anytime there is a change in the CMSPs' election status. For example, if a CMSP has registered their election status as "in whole" with the Commission and said CMSP's entire network and device offerings continue to support WEA delivery then that CMSP should not have to renew their election status with the Commission. However, if that same CMSP begins to offer mobile devices that no longer support WEA service and, as a result, becomes an "in part" participant, then they should be required to update their election status with the Commission.

ALERT MESSAGE PRESERVATION

9. NYCEM strongly supports alert message preservation on mobile devices and encourages the Commission to adopt a rule requiring such preservation. However, NYCEM strongly believes that the Commission's proposed rule requiring preservation only until the "Alert Message expires" is too narrow.⁹ Instead, NYCEM asks the Commission to require preservation of WEA messages until deleted by the consumer. As noted in our previous comments, the expanded characters and capabilities of WEA will allow alert originators to include more robust information in future messages (e.g., shelter locations, commodity distribution point locations, emergency hotline telephone numbers) which will likely still be valid after a WEA message has expired.¹⁰ For example, the current 24 hour maximum lifetime expiration limit for WEA messages is insufficient when juxtaposed with New York City's coastal storm decision

⁷ Bluegrass Cellular, June 29, 2016 *Ex Parte*, at 4.

⁸ NYCEM Comments, June 8, 2016, PS Docket 15-94 and 15-91, at 11.

⁹ WEA Further Notice of Proposed Rule Making, September 29, 2016, at 116

¹⁰ NYCEM *Ex Parte*, March 8, at 5-6.

making timeline which calls for evacuation shelters to be open and ready to receive evacuees 48 hours before the on-set of tropical storm force winds, also known as “zero hour.” New York City would issue a WEA message announcing the evacuation 48 hours ahead of zero hour and include information about how to find an evacuation shelter. NYCEM fully anticipates, however, that many people will not evacuate to shelters until much closer to zero hour at which point the WEA message would have expired and the consumer would not have easy access to critical information.

10. NYCEM believes with the added functionality of WEA including an expanded character count, embedded references, and telephone numbers, that consumers will be to verify whether or not particular information is still valid alleviating any concerns regarding outdated WEA messages. Alternatively, the Commission could consider permitting WEA messages to have a longer expiration time and/or requiring alert originators to formally cancel issued WEA messages when the information is no longer valid. This cancellation information could either (a) be displayed to the consumer or (b) the WEA message could be deleted at the point of cancellation.

EARTHQUAKE ALERT PRIORTIZATION

11. NYCEM strongly supports the Commission’s proposal to require carriers to transmit Earthquake Alert messages to the public in fewer than three seconds. NYCEM believes that the appropriate measurement timeframe to hold CMSPs to is from when an Earthquake Alert message is delivered to the carriers from the Federal Emergency Management Agency’s (“FEMA”) Integrated Public Alert and Warning (“IPAWS”) aggregator. NYCEM concurs with the Commission’s proposal that CMSPs be required to transmit this message to devices within two seconds, allowing the remaining second to handle message creation, processing, and transmission time. The Commission, FEMA, and the United States Geological Survey (“USGS”) should work collaboratively to minimize message creation and transmission time and take all steps necessary to limit any latency associated with these alerts.

12. NYCEM is unable to evaluate the accuracy of AT&T’s claim that in order to accomplish this accelerated message delivery requires a “[r]edesign of the entire system.”¹¹ However, NYCEM does not believe, given the proposed automated nature of these Earthquake Alerts, that wholesale system redesign is necessary. An integrated system of computerized sensors with preprogrammed alert triggers will assuredly be able to transmit a message to IPAWS and, subsequently to the carriers, more quickly than even the most proficient human alert originator. As such, the automated earthquake alert would be the first message in and, by default, the first message out, thus rendering the need for a total system redesign moot. In order to ensure rapid transmission, the Commission should adopt rules that require transmission of Earthquake messages “upon receipt” as proposed in the Notice.

13. NYCEM believes that there are other critical incident types, beyond earthquakes, that would be worthy of both automation and prioritization through the alert gateway and to the consumer device:

¹¹ AT&T Comments at 23, January 13, 2016.

- **Improvised Nuclear Device/Nuclear Fallout:** Believed for many years to not be survivable, new research supports that following a nuclear detonation, tens of thousands of lives can be saved by quickly directing the public to take shelter indoors and remain indoors until otherwise directed by public safety officials. The Second Edition of *Planning Guidance for Response to a Nuclear Detonation* notes that “[b]ecause of the unique nature of radiation dangers associated with a nuclear explosion, the most lives will be saved in the first 60 minutes through sheltering in place.”¹² The sooner the shelter in place message can be transmitted to the public, the more lives will be saved. Sensors will likely be the first tools to confirm that an Improvised Nuclear Device has been detonated and a pre-scripted message directing the public to shelter-in-place should then be automatically transmitted.
- **Tsunami Warnings/Imminent Tsunami Waves** – The federal government’s Tsunami Warning System is another example of how a network of sensors could detect a critical threat and then automatically (without human intervention) trigger a pre-scripted WEA message directing the public to take a protective action.

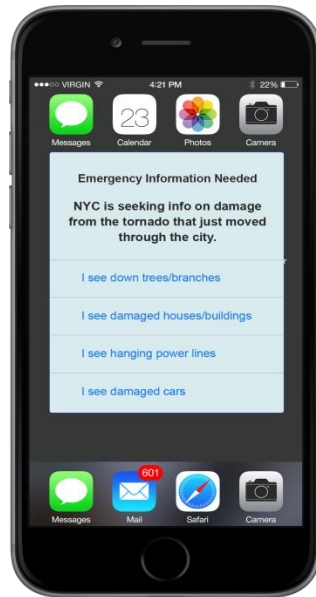
Given the ability to autonomously detect certain threats and the need to rapidly warn the general public to take lifesaving protective action, NYCEM strongly recommends the Commission create a regulatory framework that allows FEMA and its federal partners to support autonomous sensor information and automated message triggers into IPAWS. Eliminating the human factor from these messages, upon careful and appropriate validation of the supporting technology, will accelerate message delivery and save lives.

DISASTER RELIEF MESSAGING

14. NYCEM continues to strongly recommend that the Commission adopt rules that allow for many-to-one communication to be solicited by emergency management personnel. As noted in our prior comments, and supported by CSRIC V, and a multitude of other commenters, this capability will allow emergency managers and public safety officials to better – and more quickly – review and evaluate the impacts from an emergency and more efficient deployment of scarce resources.¹³ For demonstration purposes, NYCEM offers what a potential user interface could look like:

¹² Planning Guidance for Response to a Nuclear Detonation, Second Edition. Page 14. Developed by a Federal interagency committee led by the Executive Office of the President. June 2010. http://hpschapters.org/sections/homeland/documents/Planning_Guidance_for_Response_to_a_Nuclear_Detonation-2nd_Edition_FINAL.pdf. Accessed November 20, 2016.

¹³ CSRIC V Geotargeting Report at 26-26



15. Given the support for “Many-to-One” communication and/or crowdsourcing in the record prior to the release of this Notice, NYCEM strongly recommends that the Commission propose rules to be adopted if not in the upcoming Report and Order, but shortly thereafter.¹⁴ Of particular note, NYCEM directs the Commission to comments by the City of Seattle Office of Emergency Management:

Seattle recently participated in the Cascadia Rising Exercise simulating a Cascadia Subduction Zone earthquake. Seattle focused on collected damage Assessment Information. It discovered that its staff is simply too small to rapidly assess damage in a large Incident. Enabling the public to provide information back to us would help first responders gain situational awareness much earlier in an incident.¹⁵

The exercise that Director Graff describes was based around a 9.0 magnitude earthquake along the Cascadia Subduction Zone and the resulting tsunami is the most complex scenario that emergency management and public safety officials in the Pacific Northwest could face.¹⁶ It is absolutely critical that

¹⁴ See, e.g., Letter from Anne Kronenberg, Executive Director, Department of Emergency Management for the City and County of San Francisco, September 22, 2016 at 4; Letter from Craig Craft, Commissioner of Emergency Management for Nassau County, NY, September 22, 2016 at 4; Letter from Dennis J. Storemski, Director, City of Houston Mayor’s Office of Public Safety & Homeland Security, September 22, 2016 at page 2; Letter from Aram Sahakian, General Manager, City of Los Angeles Emergency Management Department, September 22, 2016 at 4; Letter from Chris T. Geldart, Director of Washington, D.C.’s Homeland Security and Emergency Management Agency, September 22, 2016 at 4

¹⁵ Letter from Barb Graff, Director of Emergency Management for the City of Seattle, September 22, 2016 at ¶16. See also, *id.* at page 2.

¹⁶ Cascadia Rising 2016 exercise description. <https://www.fema.gov/cascadia-rising-2016>. Accessed November 20, 2016.

emergency management personnel be provided force multiplier capability, like Many-to-One communication via the WEA system, in order to respond to increased demands during catastrophic events. In addition to being a force multiplier, Many-to-One capability will reduce costs borne by local, state, and federal governments when conducting damage assessments. NYCEM is committed to continuing to work with the Commission, FEMA, and the CMSP community to make this capability available.

In order to ensure an efficient response, emergency managers will need access to the latitude/longitude coordinates of each WEA recipient responding to a Many-to-One message. However, NYCEM stresses that the return information provided should be in a de-identified form and **not** contain any personally identifiable information including the respondent's phone number. A simple table that contains the longitude, latitude, and coded response is sufficient to display geospatially and make deployment decisions.

MULTIMEDIA ALERTING

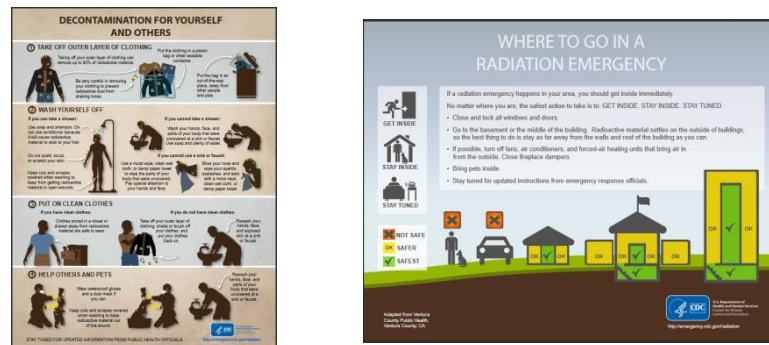
16. NYCEM strongly supports the Commission's proposal to allow multimedia content, including thumbnail size images, in WEA messages on 4G LTE and future networks. NYCEM agrees with the examples offered in the Notice of cases where multimedia could be helpful.¹⁷ Additionally we offer the following potential use cases where embedded multimedia in WEA message would be helpful:

- **Displaying an image of a wanted suspect** – On September 17, 2016, a bomb went off in New York City's Chelsea neighborhood. Early in the morning on September 19, 2016, our law enforcement partners had a suspect name, age, description, and photograph and asked for our Department's assistance in eliciting the public's assistance in locating the suspect. NYCEM transmitted a WEA message but because of the system's limitation had to direct people to "see media for pic" instead of being able to embed a photograph of the system. Following that WEA message, NYCEM contracted with a research firm to conduct a poll of New Yorkers' experience and behavior with the WEA message. While 100% of individuals polled received the message, only 45% of recipients sought out the suspect's photo from another source.¹⁸ If the suspect's image was embedded in the WEA message, 100% of recipients would have seen the image.
- **Emergency Protective Infographic** – Following a suspected release of a chemical, biological, radiological, or nuclear agent the general public would likely be directed to remove their clothes, shower, and/or shelter in place. Recognizing that there are more than 200 languages spoken in New York City and that, even with an expanded character count, NYCEM may not be able to adequately describe emergency instructions (even to English speakers), including an

¹⁷ WEA Further Notice of Proposed Rule Making, September 29, 2016, at 126

¹⁸ *Survey Findings & Analysis: Emergency Alerts Survey*, Global Strategies Group, September 28, 2016, at page 2. (Note: margin of error +/- 4.9% at 95% confidence level).

infographic that provides such information would be helpful and potentially lifesaving. For example:¹⁹



- **Map of an Exclusion Zone or Frozen Zone** – Following certain incidents, emergency officials may establish exclusion zones or frozen zones where pedestrians and vehicles are not permitted. Communicating the boundaries of these areas through an image and/or map would be clearer than a text description.

17. NYCEM notes that in the previously referenced post-WEA survey following the Chelsea Bombing, more than half of respondents believed it would be helpful if they could have responded directly to the message.²⁰ Based on the survey data, NYCEM makes a strong inference that the percentage would be significantly higher if a WEA message’s call to action was related to a need for more widespread information gathering as opposed to locating a single suspect.

18. NYCEM agrees with the Commission that there are situations where the public would benefit from WEA-transmitted multimedia content, even if it takes slightly longer (up to a minute) for delivery.²¹ However, NYCEM disagrees with the Commission’s proposal to limit multimedia content to the newly created “Public Safety Messages” category. Such a limitation is **particularly concerning** in light of the Commission’s proposal to permit consumers to opt out of particular message classes.²² Limiting multimedia content to a single message class would set up a system where consumers may receive an “Imminent Threat Alert” with text-based information which, based on their selected preferences they are interested in receiving, but then **not** receive supporting multimedia content because they did not elect to receive “Public Safety Messages.” All subscribers to New York City’s emergency notification

¹⁹ Decontamination for Yourself and Others, https://emergency.cdc.gov/radiation/pdf/infographic_decontamination.pdf and Where to Go in a Radiation Emergency, https://emergency.cdc.gov/radiation/pdf/infographic_where_to_go.pdf. Both accessed November 20, 2016.

²⁰ *Survey Findings & Analysis: Emergency Alerts Survey*, Global Strategies Group, September 28, 2016 at page 2. (Note: margin of error +/- 4.9% at 95% confidence level).

²¹ WEA Further Notice of Proposed Rule Making, September 29, 2016, at 127.

²² WEA Further Notice of Proposed Rule Making, September 29, 2016, at 155.

system, Notify NYC, are automatically enrolled in the “Emergency Alert” category and then have a choice of what other category or categories of messages they wish to receive; when the “Emergency Alert” category is selected to receive notifications for a particular incident, all subsequent messages related to that incident are sent to that same category. This is an intentional practice to prevent our subscribers from missing messages that may be important to them in light of a major incident, but not on a daily basis. Instead, NYCEM proposes the following alternatives for the Commission’s consideration:

- a. Allow multimedia images to be included in all message categories with the understanding of Alert Originators that receipt of messages could be delayed up to one minute.
- b. Allow multimedia images to be included in all messages but transmit the text portion of the message first and the corresponding image within one minute.

NYCEM believes that option (a) is sufficient in most circumstances but option (b) strikes a nice balance between the need to transmit textual information without delay and the need for supporting multimedia across all message categories.

19. While NYCEM cannot comment on the technical specifications offered by the Alliance for Telecommunication Industry Solutions (“ATIS”) the Department strongly recommends that the Commission, working with FEMA, require alert origination software providers to handle any image compression necessary and validate, prior to receipt by the IPAWS aggregator, that an image meets system requirements. Further, NYCEM recommends that the Commission and its federal partners engage the academic community to develop image compression techniques similar to polygon compression techniques developed by Carnegie Mellon University in order to allow emergency management officials to transmit higher quality images at faster speeds.²³

20. NYCEM recognizes that some legacy devices may not be able to receive full multimedia content and notes that economic factors often limit consumer’s ability to upgrade to more advanced devices. In order to ensure as many consumers as possible have access to critical WEA information, NYCEM encourages the Commission to require multimedia content be available on 3G, 4G LTE, and future networks. To make the multimedia content available to consumers whose devices do not support such receipt, NYCEM believes a link to the content that can be accessed over either the mobile device itself or, more likely, another internet equipped device is necessary. NYCEM notes that many commercially available notification systems already support file hosting (e.g., converting a file “attachment” to a hosted link) to accelerate delivery speeds. Such existing functionality can be leveraged for this purpose for consumers with legacy devices.

21. NYCEM renews its comments related to the ability of multimedia WEA messages to improve message comprehension for both people with disabilities, access, and functional needs and those with

²³ Abhinav Jauhri, Martin Griss, and Hakan Erdogan, Carnegie Mellon University, Silicon Valley Campus, Small Polygon Compression for Integer Coordinates (2015).

limited English proficiency.²⁴ Further, NYCEM concurs wholeheartedly with the Commission's analysis on the benefit of including multimedia messages directly in WEA messages. In doing so, we respectfully disagree with Chester County Emergency Management Agency and The Weather Company's analysis that such capacity is duplicative of existing delivery methods.²⁵ New York City is proud to welcome more than 55 million visitors annually from all over the world, most of who will not enroll in the City's emergency notification system or download local media applications. WEA messages, however, are ubiquitous.

22. While NYCEM appreciates the concerns expressed by the CMSPs related to multilingual alerting, the lack of proposed rules aimed at advancing the system toward multilingual support is disappointing. NYCEM has been and remains steadfast in its commitment to language access of its preparedness information and, more recently, emergency messages. Over the past year, NYCEM has undergone an unprecedented effort to pre-translate (in a generalized form) more than 100 of its most commonly issued messages in the 13 most commonly spoken languages in New York City, as well as American Sign Language ("ASL"). Presently, NYCEM includes a link at the end of e-mail messages that states: "To view this message in American Sign Language (ASL), Arabic, Bengali, Chinese, French, Haitian Creole, Italian, Korean, Polish, Russian, Spanish, Urdu, or Yiddish, please visit: <http://on.nyc.gov/1kdbhe2>." The links will take the recipient to a website that displays the ASL video and translated content. In response to locally proposed legislation, NYCEM is preparing systems to be able to deliver translated messages to the seven most commonly spoken languages in New York City in a disaggregated form. As such, subscribers who wish to receive messages in only Spanish or only Urdu will be able to make that selection at the point of registration in the system.

23. As noted by the Commission, NYCEM already takes into account the unique language needs of our city's communities. For example, Ready New York – our flagship public preparedness campaign – material is available in 13 languages; preparedness presentations are done in multiple languages, in the summer of 2016 NYCEM ran hurricane preparedness messaging in 23 languages through local newspapers, and preparedness information is distributed through ethnic media outlets. It is imperative that the Commission note that while these tools are effective from an emergency preparedness and public education perspective, they do not solve the communication gap during no-notice, dynamic emergency incidents. NYCEM strongly believes that the key to closing the emergency communication gap is through supporting multilingual WEA messages.

24. With respect to how to prioritize languages for multilingual WEA support, NYCEM recommends focusing on individuals who identify as speaking English less than well and not based simply on preferred language. For example, in New York City, 66.2% of the entire limited English proficiency population (1,181,568 individuals) speaks either Spanish or Chinese.²⁶ NYCEM recognizes the diversity of

²⁴ NYCEM Comments, December 29, 2016, at 11, and *supra* ¶16 (discussing NYCEM's opinion on multimedia content in WEA messages).

²⁵ The Weather Company Reply at 2; Chester County EMA Comments at 1.

²⁶ American Community Survey 2008-2012.

predominant languages spoken across the country and recommends incorporating the top 5-10 languages nationally.

25. NYCEM appreciates the Commission's consideration of the feasibility of including ASL in future iterations of the WEA system. As previously noted, NYCEM feels strongly that making emergency messages available via ASL is critically important. Its importance is underscored by the fact that for deaf or hard-of-hearing individuals, particularly those whose hearing loss was congenital, English is a second language. As the result of a number of factors, the reading level of deaf children by age 18 is at the third or fourth grade reading level.²⁷ As such, much of the ASL-fluent community may not be able to understand the text of a WEA message. While NYCEM would like to see ASL capability as soon as possible, the Department strongly recommends that the Commission adopt rules requiring this capability for 5G and future networks and work with the CMSPs and standard setting bodies prior to the roll out of those systems to ensure compliance from the outset. As the Commission and CMSPs consider the best way to implement this capability, NYCEM stresses the importance of a solution that allows for locally developed ASL messages to be broadcast as there are regional differences in signs.²⁸

MATCHING THE GEOGRAPHIC TARGET AREA

26. Rules that require improved WEA geo-targeting is a crucial proposal under consideration by the Commission. NYCEM strongly supports the adoption of rules that require WEA messages, as recommended by CSRIC V, to be received by 100% within the target area and limit overshoot to no more than 1/10 of a mile (528 feet).²⁹ In order to achieve this goal, and with the understanding that the state of cell tower/sector technology cannot geo-target to this level alone, NYCEM strongly urges the Commission to require device-assisted geo-targeting. In doing so, CMSPs will leverage the native capacity of today's mobile phones to improve the accuracy of WEA delivery. With respect to the "readiness of innovations" to support more flexible geo-targeting, NYCEM was most encouraged by the comments filed by John Carley, Director of Product Management, at location.io related to the utilization of predictive data for geolocation.³⁰ In Mr. Carley's filing he indicates that utilizing existing predictive technology can allow a device to determine its location within 5-15 seconds and, more importantly, can be set-up to do so without network support, thus eliminating the burden concern expressed by CMSPs.

²⁷ Visual Language and Visual Learning Science of Learning Center (2011, June). *Reading Research and Deaf Children* (Research Brief No. 4). Washington, D.C.: Donna Morere.

²⁸ See, e.g., the different ways "tornado" is signed around the country. In the Midwest, it looks like pen being drawn across the palm (<https://youtu.be/sdGjCrPhkMU?t=13>). In the South, it often looks like a funnel being drawn downward: <https://www.signingsavvy.com/sign/TORNADO/6071/1>. And in the New York area, it looks like two ends of a vortex: <http://www.handspeak.com/word/search/index.php?id=2241>.

²⁹ CSRIC V WEA Geo-targeting Report at 31-32.

³⁰ WEA Further Notice of Proposed Rule Making, September 29, 2016, at 139; Letter from John Carley, Director of Product Management, location.io. Filed September 16, 2016.

27. NYCEM is strongly **opposed** to adopting alternative accuracy requirements for non-nationwide participating CMSPs as was permitted with Wireless E911.³¹ NYCEM asserts there is a clear difference between a consumer placing a wireless E911 call and a consumer receiving a WEA message: a consumer's wireless E911 call's accuracy at one point in time has no relationship to any wireless E911 calls that the same consumer may make in the future. In contrast, a consumer may decide to opt out of WEA based on receipt of an alert that was not appropriately geo-targeted. That consumer's decision to opt out of the WEA system will be maintained wherever else that consumer travels in the country. New York City relies on WEA to communicate emergency information to more than 55 million annual visitors and NYCEM does not want poor geo-targeting and associated warning fatigue to impact visitors' ability to receive critical information. The Commission should adopt and enforce a national geo-targeting standard that matches the polygon selection of the alert originator.

28. With respect to handling WEA geo-targeting if location services are turned off and/or if the location of the device cannot be determined, NYCEM feels that it is prudent for the device to display the message as if that device was within the polygon. Additionally, NYCEM encourages the Commission and CMSPs to examine the feasibility of defaulting location services "on" for the purpose of WEA message receipt as is done for outgoing 911 calls.

29. NYCEM recommends that the Commission adopt geo-targeting standards that are as granular as possible or, as noted in the CSRIC V report, five decimal places.³² The density of New York City is such that every block has the potential to add thousands-to-tens of thousands of additional individuals. Permitting alert originators to geo-target down to a granular level will limit warning fatigue, limit network congestion, and potentially allow additional classes of alert originators in the future (e.g., college campuses, large residential housing complexes, hospitals, etc.).

WEA ON 5G NETWORKS

30. NYCEM applauds the Commission for opening a dialogue on the future of WEA in the context of forthcoming 5G networks. NYCEM believes that in doing so the Commission will create an environment where emergency managers, CMSPs, and other stakeholders can work collaboratively to ensure the wireless network of the future is able to keep pace with the nation's emerging threat environment. Further, early collaboration on WEA advancements can be accounted for in network design from the outset, relieving CMSPs of redesign burden. In this spirit, NYCEM strongly recommends that the Commission convene a working group to consider WEA requirements for 5G networks, including but not limited to:

³¹ See Wireless E911 Location Accuracy Requirements, *Report and Order*, PS Docket 07-114, 30 FCC Rcd. 1259, 1324-25 at 103-104.

³² CSRIC V WEA Geo-targeting Report at 31.

- Expanding character counts beyond 360. As noted in the *START Report*, longer messages can improve the public's response,³³
- Making Many-to-One feedback a reality,
- Supporting video in order to (a) support American Sign Language; (b) allow public officials to directly communicate emergency information to consumer devices; and (c) to allow emergency instructional videos to be broadcast,
- Supporting larger image sizes and/or multiple images, and
- Expanding the number of languages supported.

PROMOTING INFORMED CONSUMER CHOICE AT THE POINT OF SALE

31. As emergency preparedness begins with personal preparedness, it is critical that consumers be given an opportunity to make an informed decision on which service and/or device to purchase based on a series of factors, including WEA capability. NYCEM strongly encourages the Commission to adopt more robust disclosure requirements by CMSPs who elect to not provide WEA services throughout their entire coverage area and/or on all devices supported by their network. NYCEM recommends that the Commission adopt the following rule:

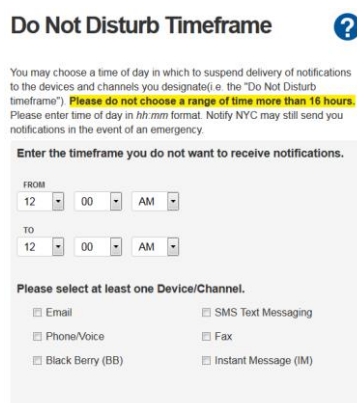
- a. When a CMSP does not offer WEA service across their entire network, a statement disclosing same along with a coverage map and/or text-based description of what areas the consumer will not receive WEA coverage. For example, "Freedom Wireless does not offer Wireless Emergency Alerts, which are designed to deliver emergency and potentially lifesaving information on its entire network. When you are using your telephone in the following areas: <area 1>, <area 2>, <area 3>, and <area 4> (see attached map), you will not receive these messages."
- b. When a device does not support WEA service, a statement disclosing same. For example, "The phone you are about to purchase, <insert device model>, does not support receipt of Wireless Emergency Alerts, which are designed to deliver emergency and potentially lifesaving information, on this device." Note: for the purposes of this recommendation, "purchase" as referenced previously includes times when the telephone being is sold to the consumer without a cash outlay as well as pre-paid mobile phones.
- c. When a CMSP does not provide WEA service at all, a statement disclosing same. For example, "Freedom Wireless does not offer Wireless Emergency Alerts, which are designed to deliver emergency and potentially lifesaving information, on their network."

In addition to disclosures, NYCEM recommends the Commission, in collaboration with FEMA, consider a public education effort to include consumer awareness in their preparedness education materials.

³³ *START Report* at 30. At the same time, however, the *START Report* finds that "[t]here is nothing inherently better about 1,380-character messages." *Id.* at 35. Rather, "people need to be provided with sufficiently detailed information about exactly what steps to take to protect themselves, and the number of characters needed to accomplish this likely varies across hazards." *Id.* at 31.

PROMOTING INFORMED CONSUMER CHOICE ABOUT THE RECEIPT OF WEA ALERT MESSAGES

32. While NYCEM continues to strongly support legislative action to eliminate the consumer's ability to opt out of emergency messages, NYCEM also agrees with commenters that, in certain circumstances, consumers should have the ability to set receipt preferences.³⁴ NYCEM notes that its Notify NYC customers are already presented with options to set "Do Not Disturb" preferences on their account (see excerpted image below).



Do Not Disturb Timeframe ?

You may choose a time of day in which to suspend delivery of notifications to the devices and channels you designate (i.e. the "Do Not Disturb timeframe"). **Please do not choose a range of time more than 16 hours.** Please enter time of day in *hh:mm* format. Notify NYC may still send you notifications in the event of an emergency.

Enter the timeframe you do not want to receive notifications.

FROM
12 00 AM

TO
12 00 AM

Please select at least one Device/Channel.

☐ Email ☐ SMS Text Messaging
☐ Phone/Voice ☐ Fax
☐ Black Berry (BB) ☐ Instant Message (IM)

However, consistent with our established protocols and practices, NYCEM believes that any such delivery preferences should allow alert originators to override those preferences in the event of a life-threatening emergency. Such "override" capability can be based on the WEA message type selected by the alert originator. For example, if an "Imminent Threat Alert" WEA message is being sent, the message must be delivered to the consumer irrespective of a consumer's delivery preferences. With respect to the "cached approach" offered for comment by the Commission, NYCEM fully supports this approach as it respects consumers but ensures the information transmitted to them is still displayed on their devices.³⁵ Further, NYCEM encourages the Commission to consider examples of commercially-available "Do Not Disturb" setting programs that offer consumers additional flexibility with respect to device behavior. For example, Apple's iOS offers consumers the ability to authorize phone calls to override its "Do Not Disturb" settings based on the frequency of calls. NYCEM recommends device developers explore creating the capability of a device to override the "do not disturb" feature in the event two or more WEA messages are received.

33. NYCEM believes that adopting rules that require CMSPs to offer a full definition of the different categories of WEA messages would promote both better consumer understanding and encourage consistency of use across jurisdictions. In order to develop definitions that are agreed upon by the emergency management and CMSP community and, equally importantly, understandable by consumers, NYCEM encourages the Commission to work with its federal and academic partners. Additionally, NYCEM renews its previously submitted comments and encourages the Commission to adopt rules

³⁴ NYCEM Comments, December 29, 2015 at 7-8; Apple Ex Parte at 1; Microsoft Comments at 4.

³⁵ WEA Further Notice of Proposed Rule Making, September 29, 2016, at 157

requiring CMSPs and device manufacturers to develop user interfaces that ask consumers to affirmatively acknowledge the risk in opting out of imminent and severe threat messages.³⁶

IMPROVING WEA TRANSPARENCY

34. NYCEM strongly supports the need for regular, CMSP-by-CMSP, reporting on WEA capability, including the elements proposed by the Commission.³⁷ While NYCEM concurs with the Commission's proposal for such reporting to be submitted on an annual basis in most cases, NYCEM emphasizes the need for **immediate** reporting to the Commission and to the appropriate alert originators whenever a CMSP discovers an issue in their system that has the potential to prevent or delay WEA messages from being delivered. Adding such a provision will allow alert originators to adjust their respective crisis and risk communication strategies until such issue or issues are resolved. Without such an immediate reporting provision, emergency managers and alert originators may send out WEA messages under the presumption that their constituency is being alerted when, in fact, messages are not successfully transmitted. NYCEM does **not** support alternative proposals for less-than-annual reporting. WEA is a mission-critical system and needs to be tested and reported on in light of routine CMSP maintenance and upgrade activity.

35. With respect to the data on which annual performance reports will be based, NYCEM feels strongly that such reports should be based on an analysis of all WEA messages that were or should have been transmitted during the reporting period and **NOT** only limited to State/Local WEA tests. First, in order to prevent warning fatigue and opt outs, NYCEM plans on live WEA testing on an infrequent basis and anticipates many alert originators would take a similar approach. Additionally, as Required Monthly Tests are not required to be delivered to consumer devices and can be delayed up to 24 hours, they do not constitute a timely end-to-end testing of the system whereas live WEA tests and, more importantly, unscheduled emergency messages do allow for end-to-end transmission and delivery data.

36. With respect to evaluating the accuracy of geo-targeting, NYCEM believes that CMSPs should be required to provide a high level of detail, including the percentage of instances where CMSPs meet or do not meet the geo-targeting standard. In cases where the geo-targeting standard was not met, the CMSP should be required to disclose the amount of overshoot/undershoot that occurred. NYCEM also encourages the Commission to require this level of analysis on a message-by-message basis so alert originators can refine their geo-targeting practices on subsequent messages. Further, NYCEM recommends that the Commission work with CMSPs and alert originators to develop near real-time geo-targeting analysis capability in 5G and future networks. Such requirements would allow alert originators to quickly analyze the reach of their message and, if necessary, incorporate other targeted alerting strategies in areas where the WEA message was not delivered.

37. While NYCEM appreciates the Commission's acknowledgement of our Department's efforts to collect delivery and latency data on WEA messages, it is critical that data collection and evaluation

³⁶ NYCEM Comments, December 29, 2015, at 7.

³⁷ WEA Further Notice of Proposed Rule Making, September 29, 2016, at 161.

metrics be standardized and codified in the rules. NYCEM is fortunate enough to have the capacity to perform data analysis on a limited scale but many jurisdictions and agencies do not have this capability. Even in New York City, NYCEM does not have the capacity to perform this level of analysis during major incidents when resources are committed to responding to the emergency.

38. NYCEM agrees with the Commission's proposal to allow CMSP WEA reports to be considered presumptively confidential and **strongly** supports the proposal to require CMSPs to share such information with local emergency management agencies. Alert originators need access to this information in order to understand how WEA messages propagate in their local communities by each CMSP offering service within their jurisdiction. Such transparency, even with the presumptively confidential classification, will surely allow the Commission to direct research and adopt future rules in the public interest. NYCEM believes that with 5G networks on the horizon, now is an excellent time to begin requiring such reports in order to baseline current capabilities, identify gaps, and inform future network design.

ALERT LOGGING STANDARDS AND IMPLEMENTATION

39. NYCEM believes that a standard reporting format applicable to all CMSPs would benefit the emergency management community. Even if reports need to be reviewed separately by each CMSP, a reporting standard would allow emergency managers to understand the associated data elements and metrics across providers. Without such standardization, it would be difficult and time consuming to review and understand alert logs, if they are understandable to non CMSP-employees at all. Further, we encourage the Commission to apply alert logging rules to the entire system, end-to-end, including handset delivery. Such end-to-end delivery data will surely increase the emergency management community's confidence in the WEA system's ability to deliver emergency messages in a timely fashion.

COMPLIANCE TIMEFRAMES

40. NYCEM concurs with the Commission's proposed timeframes with the exception of "Matching the Geographic Target Area." As improvements to geo-targeting are critical to the future success of the WEA system, NYCEM recommends that the compliance timeframe for the associated rules be reduced to "24 months of the rules' publication in the Federal Register or within 12 months of the completion of all relevant standards, whichever is sooner."

BENEFIT-COST ANALYSIS

41. NYCEM strongly agrees that the adoption of the rules proposed in the Notice will decrease the risk of death and injury even beyond the noted risks of severe weather and child abductions. For example, emergency messaging directing the public to avoid an area because of a potential explosive device (as demonstrated by NYCEM in response to the September 17, 2016 bombing in Manhattan) has the potential to save countless lives. Alerting the public to significant road closures early on in an incident, thus, allowing the public to plan an alternate route will result in savings by minimizing productivity loss, reducing unnecessary fuel usage, and lessening associated traffic congestion. In addition, the provision of official, emergency information to the public can be reassuring and empowering, potentially reducing

stress and the need for future mental health services.³⁸ As noted in the Notice and in line with our previous comments, WEA improvements will reduce local governments' reliance on commercially available notification systems which often have significant costs and, unlike WEA, require consumers to opt in.³⁹

³⁸ World Health Organization (WHO) *Mental and Social Aspects of Health Populations Exposed to Extreme Stressors* at 3.

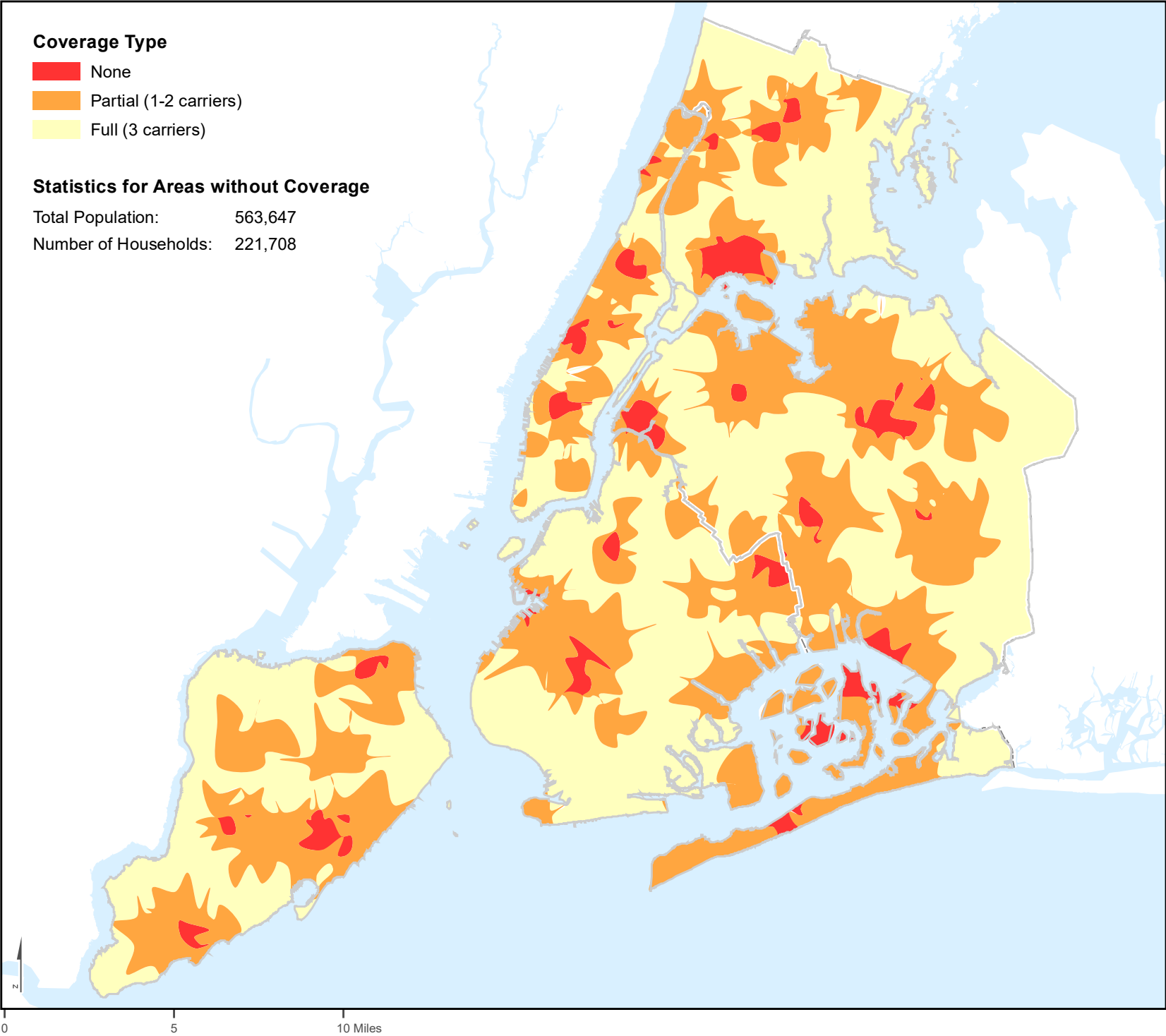
³⁹ WEA Further Notice of Proposed Rule Making, September 29, 2016, at 185; NYCEM Comments, December 29, 2015 at 8.

Appendix A - Notional Wireless Emergency Alert System Coverage Details

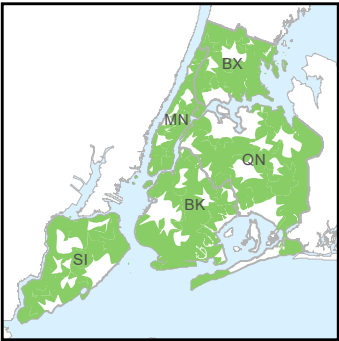
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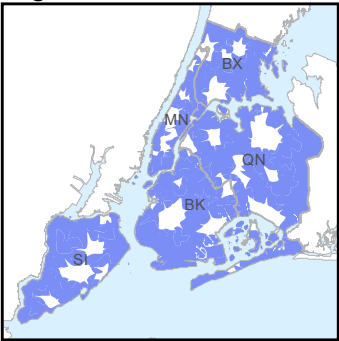
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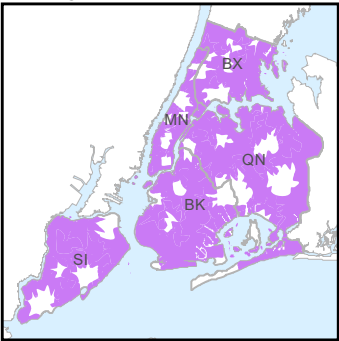
Freedom Wireless



Eagle Wireless



Liberty Wireless



Disclaimer
Submitted by NYCCEM as part of PS Docket 15-91 and 15-94 for demonstration purposes only.